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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,792	07/14/2003	Daniel J. Gregoire	091-0181	1104

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EXAMINER	
BOCURE, TESFALDET	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,792	GREGOIRE, DANIEL J.	
	Examiner	Art Unit	
	Tesfaldet Bocure	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-23* is/are allowed.

6)☒ Claim(s) *1-5,7,24-27 and 29* is/are rejected.

7)☒ Claim(s) *6 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/14/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement (IDS) received on July 14, 2003 has been considered by the Examiner and the initialed copy (one copy) of the IDS is attached with this correspondence.

Specification

2. The abstract of the disclosure is objected to because the title in the abstract of the disclosure should be deleted. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: "may transmitted" in page 14, line 3 should be amended to read as---may be transmitted---.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claimed "processing module reads said multi-bit buffer at said clock signal to convert said input serial bit streams to said input parallel bit stream," in claim 2 is missdescriptive. Rather, the processor module (216), which receives the parallel output from the N-Bit Buffer converts the parallel bits to, symbols I_o and Q_o as shown in fig. 2 and disclosed in the corresponding text of the disclosure. In other word, it is the N-Bit Buffer, which receives the serial bits and converts to parallel and processor, which converts the parallel input bits to symbols.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1,3,7,24-27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (US patent number 6,907,085) in view of Isaksen et al. (US patent number 6,973,141).

Kubo teaches a transmitter for transmitting a digitally modulated signal (see figs 4,7 and 9) comprising: a compensation circuit (see for example distortion compensating circuit 37) for compensating a non-linear distortion due amplification and the phase distortion of the signal to be transmitted as in claims 1 and 24.

Further to claims 7, Kubo shows that the phase and gain compensated signal is converted to IF by the QMOD and further converting to RF by the IF to RF converter 24 and 28 in fig. 2 as in claim 29.

Further to claims 3,4,5 and 27, Kubo teaches that the phase and gain adjustment to the signals to be modulated by the QMOD having inherent in-phase and quadrature components where the phase and gain of both the in-phase and quadrature components is adjusted.

Further to claim 24, in the process of compensating the non-linear gain of the amplifier is scaled by the scaling circuit and phase is rotated by the phase rotating circuitry shown in figure 13B.

The gain and phase correction is performed while the transmitter is in the process of transmitting the data and reads on the claimed real time in claim 26.

The gain adjustment is calculated from the output of the amplifier having non-linear property and inherent curve and reads on the claimed amplifier curve in claim 25.

Kubo teaches that the predistortion of the digitally modulated signal (QAM modulated signal) having inherent constellation points of phase and amplitude variation (in QAM where each symbol in the signal space, constellation having phase and amplitude variation from the neighboring symbols). However, Kubo fail to teach that the incoming bits to be modulated are mapped to symbol signal as in claims 1 and 24.

Isaksen for the same endeavor as the instant application and that of Kubo teaches that the input bits (162) mapped to symbols by mapper (104) to be digitally modulated by inphase and quadrature modulator (190) for further transmission.

The transmitter of Isaksen would be able to map the bits in to a plurality of adaptive symbol rate, 4QAM, 16 QAM---256 QAM (see col. 6), according to the mode of transmission (see abstract).

Therefore, it would have been obvious to one of an ordinary skill in the art to use the bit mapping of Isaksen in the transmitter of Kubo to transmit a plurality of different symbols rates according to the mode of operation at the time the invention was made.

Allowable Subject Matter

8. Claims 8-23 are allowed.

9. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. Claims 6 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patent numbers 5,699,383, 5,903,823, 6,304,140, 6,266,517, 6,798,843 and 6,993,090 issued to Ichiyoshi, Moriyama, Thron et al., Fitzpatrick et al., Wright et al. and Kusunoki respectively disclose a transmitter having means for predistorting the amplitude and phase of the signal to be transmitted.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tesfaldet Bocure whose telephone number is (571) 272-3015. The examiner can normally be reached on Mon-Thur (7:30a-5:00p) & Mon.-Fri (7:30a-5:00p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti (Jay) Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tesfaldet Bocure
Primary Examiner
Art Unit 2611

T.Bocure